ALEXANDRE CARMINOT

Engineering Student - Machine Learning & Medical Engineering

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EDUCATION

Master of Engineering - eHealth and Machine Learning 09/2019 - Present
EPF Engineering School Paris Expected Graduation in 2025

- Engineering curriculum with a healthcare specialization: integrating core engineering principles, mathematics, programming, and machine learning with medical technology, device design, and healthcare informatics.

Computer Science - Exchange Program 09/2024 - Present
Tianjin University

- Focus on Algorithmic programming, machine learning , computer vision, and applied data science

Intelligent Medical Engineering - Exchange Program 09/2023 - 01/2024
Tianjin University

- Specialized in Precision medicine, neurosciences, brain-computer interfaces (BCI), medical imaging, and medical engineering.

SPECIALIZATION COURSES

Deep Learning and Advanced TensorFlow DeepLearning.AI - Fall 2024
Advanced Medical Neuroscience Duke University - Summer 2024
Advanced Machine Learning on Google Cloud Google - Fall 2024
Machine Learning Specialization Stanford University - Fall 2024

PROJECTS

Find my other Projects here

Disease Prediction Algorithm - Python [GitHub Link] 07/2024 - 09/2024
Developed a medical diagnostic tool that predicts 41 diseases from 131 symptoms with 96% accuracy, using a multi-layer neural network built with numpy.

- Developed multi-layer neural network with dynamic layer configuration, dropout rate and backpropagation for maximized F1-score and minimized overfitting using numpy.
- Enhanced model robustness by benchmarking against an optuna-tuned ensemble (XGBoost, SVM & ReLU) with cross-validation (84% to 96% with the ensemble model).

BCI Workshop - MATLAB,C++ [GitHub Link] 09/2023 - 10/2023
Led a team to develop a real-time hand gesture recognition & reproduction system achieving 98% accuracy using:

- Custom pattern recognition algorithms processing flexion sensor data
- Real-time classification of 6 distinct hand gestures (static & dynamic)
- Implemented signal processing pipeline for noise reduction and feature extraction

NLP Text Classifier - Python [GitHub Link] 09/2024
Developed a high-performance NLP model that categorizes BBC news articles into topics with 94% accuracy, enhancing automatic content analysis.

- Designed a neural network architecture utilizing LSTMs and Convolution layers activations for effective feature learning and classification.
- Implemented data preprocessing techniques, including tokenization, padding, stemming, and TF-IDF vectorization for efficient feature extraction.
- Employed Optuna for hyperparameter tuning, optimizing dropout rate, learning rate, and batch size to improve model performance and training efficiency.

EXPERIENCE

AI Model Review Specialist 01/2024 - Present
Outlier.AI | Current Remote

- Assess scientific, mathematical and code reasoning in AI responses, validating complex algorithms and technical explanations to enhance model precision and reliability.

Private Tutor and Esports Coach 06/2022 - 09/2023

- Led personalized tutoring sessions in Math and Physics for 10 students, strengthening foundational skills and boosting student confidence in subject mastery.
- Customized tutoring and coaching strategies to suit individual skill levels, resulting in improved student performance

Internship 06/2022 - 9/2022
Zen2050Maintenant Paris

- Developed and orchestrated interactive exhibition stands for Zen2050's annual event, creating eco-conscious games, climate-themed art, and educational activities that engaged visitors in sustainability initiatives.

ABOUT ME

As a student of engineering and medicine, my journey is rooted in the intersection of these fields.
Focusing on machine learning and medical engineering, I am dedicated to exploring neuroscience and artificial intelligence.
This path has led me into brain-computer interfaces and neuro-engineering, where I develop AI-driven solutions bridging technology and human capability.

FIND ME ONLINE

Alexandre CARMINOT [Link]

My Portfolio [Link]
My Projects [Link]

Alexandre CARMINOT [Link]

SKILLS

Programming

Python - C++ - Java - Docker - Git

MATLAB - HTML, CSS & JavaScript

Frameworks and Libraries

TensorFlow - Keras - MNE - PyTorch

Scikit - Seaborn - SciPy

ML/AI

Machine Learning - Deep Learning

DNN - CNN - NLP - LSTM - C.Vision

Engineering Skills

Problem Solving - Innovation - Analysis

Critical thinking - Device design

LANGUAGES

French Native, Voltaire Certification
English Expert, TOEIC (980/990)
Spanish Intermediate, B1
Chinese Elementrary, HSK3

PASSIONS

- Martial Arts: Taekwondo (Red Belt), Judo (Brown Belt)
- Team sports: Rugby & Soccer
- Music: Piano (Playing for seven years)
- Science: Astronomy, Cosmology, Archaeology